

IN THE DRAWINGS:

The attached Replacement Sheet 3/6 includes a change to Figure 3 that replaces the reference element “324” with the correct reference element “320.” This is the only change to Figure 3.

Attachment: Replacement Sheet 3/6

REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-21 in the application. In the present response, the Applicants have amended Claims 2, 9 and 16. No other claims have been canceled or added. Accordingly, Claims 1-21 are currently pending in the application.

I. Formal Matters and Objections

The Examiner has objected to the Figure 3 for failing to comply with 37 CFR 1.84(p)(5) because a reference character is included that is not mentioned in the description. In response, the Applicants have corrected Figure 3 by replacing element “324” with “320.” Accordingly, the Applicants respectfully request the Examiner to withdraw the objection to the drawings.

The Examiner has requested the Applicants check the application for any minor errors. In response, the Applicants have corrected errors found in paragraph 65.

II. Rejection of Claims 2, 9 and 16 under 35 U.S.C. §112

The Examiner has rejected Claims 2, 9 and 16 under 35 U.S.C. §112, first paragraph, for failing to comply with the enablement requirement and under 35 U.S.C. §112, second paragraph, for being indefinite. In response, the Applicants have amended Claims 2, 9 and 16 and respectfully request the Examiner to withdraw the §112 rejections of Claims 2, 9 and 16 and allow issuance thereof. Support for the amended claims can be found in paragraph 56 that discusses modifying a thread (*i.e.*, replacing a thread’s current instruction with a NO-Operation (NOP) instruction) to

allow the thread to continue to traverse a multi-thread execution pipeline loop while waiting for a device request to be fulfilled.

III. Rejection of Claims 1-3, 6-10 and 13-14 under 35 U.S.C. §102

The Examiner has rejected Claims 1-3, 6-10 and 13-14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,933,627 to Parady. The Applicants respectfully disagree.

Parady is directed to microprocessors which execute multi-threaded programs and, more particularly, to processing blocked (waiting required) memory accesses in these programs. (*See* column 1, lines 12-15.) Parady does not teach, however, generating a context switch request for a thread executing within a multi-thread execution pipeline loop when the thread issues a device request for access to a fulfillment latency exceeding the pipeline latency as recited in independent Claims 1 and 8. Instead, Parady teaches switching between threads of a program **in response** to a long-latency **event**. For example, Parady teaches switching between threads when a cache miss occurs. (*See* column 2, lines 26-30.) After an indication of a miss, thread switching logic 112 switches to the next thread. (*See* column 3, line 66 to column 4, line 5 and Figure 3.) Thus, Parady teaches switching between threads **after a miss occurs** instead of generating a request for a context switch **when** a thread issues a **device request**.

Parady, therefore, does not disclose each and every element of independent Claims 1 and 8 and as such, is not an anticipating reference of Claims 1 and 8 and Claims dependent thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to Claims 1-3, 6-10 and 13-14.

IV. Rejection of Claims 4-5 and 11-12 under 35 U.S.C. §103

The Examiner has rejected Claims 4-5 and 11-12 under 35 U.S.C. §103(a) as being unpatentable over Parady in view of Kon and Medina's Round-Robin Scheduling. The Applicants respectfully disagree.

As discussed above, Parady does not teach each element of independent Claims 1 and 8. Additionally, Parady does not suggest each element of independent Claims 1 and 8 since Parady teaches switching threads after a cache miss occurs. (*See* column 3, line 66 to column 4, line 5 and Figure 3.) Kon has not been cited to cure the deficiencies of Parady but to teach a miss fulfillment FIFO buffer. (*See* Examiner's Action, page 7.) Furthermore, Kon does not cure the deficiencies of Parady but is directed to round-robin scheduling and defines round-robin scheduling as allocating a CPU to processes for a time interval of a quantum. (*See* page 1.) Thus, the cited combination of Parady and Kon does not teach or suggest each and every element of independent Claims 1 and 8 and, as such, does not provide a *prima facie* case of obviousness of Claims 4-5 and 11-12 that, respectively, depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection and allow issuance of Claims 4-5 and 11-12.

V. Rejection of Claims 15-17 and 20-21 under 35 U.S.C. §103

The Examiner has rejected Claims 15-17 and 20-21 under 35 U.S.C. §103(a) as being unpatentable over Parady in view of by U.S. Patent No. 5,509,006 to Wilford, *et al.* The Applicants respectfully disagree.

As discussed above regarding independent Claims 1 and 8, Parady does not teach or suggest generating a context switch request for a thread executing within a multi-thread execution

pipeline loop when the thread issues a device request for access to a fulfillment latency exceeding the pipeline latency as also recited in independent Claim 15. Wilford has not been cited to cure this deficiency of Parady but to teach tree engines that parse data. (See Examiner's Action, page 10.) Furthermore, Wilford does not cure the deficiencies of Parady but is directed to providing specialized apparatus capable of switching packets at high speed. (See column 1, lines 65-66.) In a preferred embodiment, the specialized apparatus includes a decision tree memory. (See column 2, lines 9-10.) Thus, the cited combination of Parady and Wilford does not teach or suggest each and every element of independent Claim 15 and, as such, does not provide a *prima facie* case of obviousness of Claim 15 and Claims dependent thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection and allow issuance of Claims 15-17 and 20-21.

VI. Rejection of Claims 18-19 under 35 U.S.C. §103

The Examiner has rejected Claims 18-19 under 35 U.S.C. §103(a) as being unpatentable over Parady in view of Wilford and in further view of Kon. The Applicants respectfully disagree.

As discussed above, Parady, Wilford, and Kon, individually or in combination, do not teach or suggest generating a context switch request for a thread executing within a multi-thread execution pipeline loop when the thread issues a device request for access to a fulfillment latency exceeding the pipeline latency as recited in independent Claim 15. Thus, the cited combination of Parady, Wilford and Kon does not teach or suggest each and every element of independent Claims 18-19, which depend on Claim 15. The cited combination, therefore, does not provide a *prima facie*

case of obviousness of Claims 18-19. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection and allow issuance of Claims 18-19.

VII. Comment on Cited References

The Applicants reserve further review of references cited but not relied upon if relied upon in the future.

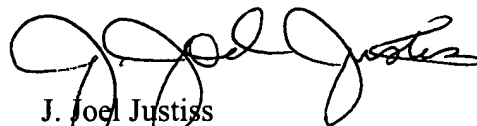
VIII. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-21.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

HITT GAINES, PC

A handwritten signature in black ink, appearing to read "J. Joel Justiss", written over a horizontal line.

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Dated: 2/2/05

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